**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. - 38. (Canceled)

39. (New) A method of encoding a video stream to conserve memory, the method comprising:

receiving the video stream;

generating a base bitstream comprising one or more base video object planes (VOPs) using the video stream, each base VOP being associated with a base presentation time stamp (PTS) and a base decoding time stamp (DTS);

generating a fine granularity scalability (FGS) bitstream comprising one or more FGS VOPs using the video stream, each FGS VOP being associated with a corresponding base VOP, an FGS DTS, and an FGS PTS; and

generating an FGS temporal scalability (FGST) bitstream comprising one or more FGST VOPs using the video stream, each FGST VOP being associated with two corresponding base VOPs, an FGST DTS, and an FGST PTS,

wherein the FGS DTS and the FGS PTS associated with each FGS VOP are selected to be equal to one another,

wherein the FGST DTS and the FGST PTS associated with each FGST VOP are selected to be equal to one another,

wherein the FGS PTS associated with each FGS VOP is selected to be equal to the base PTS associated with its corresponding base VOP,

wherein the FGS DTS is selected to be different from any of the FGST DTSs, and

wherein the FGS DTS associated with each FGS VOP is selected to be equal to the base DTS associated with one of the base VOPs.

40. (New) The method of encoding the video stream to conserve memory according to claim 39, wherein each FGST VOP can be decoded by a decoder as soon as each FGST VOP's two corresponding base VOPs are stored by the decoder.

41. (New) The method of encoding the video stream to conserve memory according to claim 39, wherein each FGST VOP can be decoded by a decoder with at most three frame buffers.

42. (New) The method of encoding the video stream to conserve memory according to claim 39, wherein the FGST DTS associated with each FGST VOP represents an interval that is immediately after a later of two intervals represented by the two base DTSs associated with each FGST VOP's two corresponding base VOPs.

43. (New) The method of encoding the video stream to conserve memory according to claim 42, further comprising:

combining the FGS and FGST bitstreams to generate a single enhancement bitstream.

44. (New) The method of encoding the video stream to conserve memory according to claim 42, further comprising:

packetizing the base bitstream and the FGS bitstream; and

multiplexing the packetized bitstreams to generate a transport stream.

45. (New) The method of encoding the video stream to conserve memory according to claim 39, wherein each of the generation of the base bitstream, the generation of the FGS bitstream, and the generation of the FGST bitstream comprises an MPEG-4 encoding.

46. (New) The method of encoding the video stream to conserve memory according to claim 39, wherein each of the generation of the base bitstream, the generation of the FGS bitstream, and the generation of the FGST bitstream comprises an FGS encoding.

47. (New) The method of encoding the video stream to conserve memory according to claim 39, further comprising:

combining the FGS and FGST bitstreams to generate a single enhancement bitstream.

48. (New) The method of encoding the video stream to conserve memory according to claim 39, further comprising:

packetizing the base bitstream and the FGS bitstream; and

multiplexing the packetized bitstreams to generate a transport stream.

49. (New) A method of decoding a multiplexed bitstream to generate a video stream, the method comprising:

receiving the multiplexed bitstream;

demultiplexing and depacketizing the multiplexed bitstream to generate a base bitstream, a fine granularity scalability (FGS) bitstream, and an FGS temporal scalability (FGST) bitsteam;

decoding the base bitstream to generate one or more base video object planes (VOPs), each base VOP being associated with a base presentation time stamp (PTS) and a base decoding time stamp (DTS);

decoding the FGS bitstream to generate one or more FGS VOPs, each FGS VOP being associated with a corresponding base VOP, an FGS DTS, and an FGS PTS; and

decoding the FGST bitstream to generate one or more FGST VOPs, each FGST VOP being associated with two corresponding base VOPs, an FGST DTS, and an FGST PTS,

presenting FGST VOPs, the FGS VOPs, and the base VOPs to be displayed,

wherein each FGS VOP is decoded and presented at a same first time unit,

wherein each FGST VOP is decoded and presented at a same second time unit,

wherein each FGS VOP and its corresponding base VOP are presented at the same first time unit, and

wherein the method further comprises using at most a total of three frame buffers for storing partially decoded data of the base bitstream, of the FGS bitstream, and of the FGST bitstream and for presenting the decoded bitstreams.

50. (New) The method of decoding the multiplexed bitstream according to claim 49, wherein the total of three frame buffers are used concurrently for decoding the base bitstream, the FGS bitstream, and the FGST bitstream and for presenting the decoded bitstreams.

51. (New) The method of decoding the multiplexed bitstream according to claim 49, wherein each FGST VOP is decoded right after each FGST's two corresponding base VOPs have been decoded, unless this would cause an FGST VOP to be decoded out of display order, in which case, that FGST VOP is decoded in the display order.

52. (New) The method of decoding the multiplexed bitstream according to claim 49 wherein the decoding of the multiplexed bitstream comprises an MPEG-4 decoding.

53. (New) The method of decoding the multiplexed bitstream according to claim 49, wherein the decoding of the multiplexed bitstream comprises an FGS decoding.

54. (New) The method of decoding the multiplexed bitstream according to claim 49, wherein the multiplexed bitstream is an MPEG-4 Transport stream.

55. (New) The method of decoding the multiplexed bitstream according to claim 49, wherein each FGST VOP can be decoded as soon as each FGST VOP's two corresponding base VOPs are stored in the frame buffers.

56. (New) The method of decoding the multiplexed bitstream according to claim 49, wherein each FGST VOP is decoded with at most three frame buffers.

57. (New) A video encoding system for generating a base bitstream and one or more enhancement bitstreams using a video stream, the video encoding system comprising:

a base encoder for receiving the video stream and for generating the base bitstream using the video stream, the base bitstream comprising one or more base video object planes (VOPs);

an enhancement encoder for receiving processed video data from the base encoder, for generating a fine granularity scalability (FGS) bitstream using the processed video data, the FGS bitstream comprising one or more FGS VOPs, each FGS VOP

being associated with a corresponding base VOP, and for generating an FGS temporal scalability (FGST) bitstream using the processed video data, the FGST bitstream comprising one or more FGST VOPs, each FGST VOP being associated with two corresponding base VOPs,

a multiplexer for time stamping each base VOP with a base decoding time stamp (DTS) and a base presentation time stamp (PTS), for time stamping each FGS VOP with an FGS DTS and an FGS PTS, for time stamping each FGST VOP with an FGST DTS and an FGST PTS, for packetizing the base bitstream and the FGS bitstream into FGS packets, for packetizing the FGST bitstream into FGST packets, and for multiplexing the FGST packets with the FGS packets to generate a multiplexed bitstream,

wherein the FGS DTS and the FGS PTS associated with each FGS VOP are selected to be equal to one another,

wherein the FGST DTS and the FGST PTS associated with each FGST VOP are selected to be equal to one another,

wherein the FGS PTS associated with each FGS VOP is selected to be equal to the base PTS associated with its corresponding base VOP,

wherein the FGS DTS is selected to be different from any of the FGST DTSs, and

wherein the FGS DTS associated with each FGS VOP is selected to be equal to the base DTS associated with one of the base VOPs.

58. (New) The video encoding system according to claim 57, wherein the FGST DTS associated with each FGST VOP

represents an interval that is right after a later of two intervals represented by the two base DTSs associated with its two corresponding base VOPs.

59. (New) The video encoding system according to claim 58, wherein the generation of the base bitstream, the generation of the FGS bitstream, and the generation of the FGST bitstream comprises MPEG-4 encoding, and wherein the multiplexed bitstream is an MPEG-4 Transport stream.

60. (New) The video encoding system according to claim 58, wherein the generation of the base bitstream, the generation of the FGS bitstream, and the generation of the FGST bitstream comprises fine granularity scalability (FGS) encoding.

61. (New) The video encoding system according to claim 57, wherein each FGST VOP can be decoded by a decoder as soon as each FGST VOP's two corresponding base VOPs are stored by the decoder.

62. (New) The video encoding system according to claim 57, wherein each FGST VOP can be decoded by a decoder with at most three frame buffers.

63. (New) The video encoding system according to claim 57, wherein each of the generation of the base bitstream, the generation of the FGS bitstream, and the generation of the

FGST bitstream comprises an MPEG-4 encoding, and wherein the multiplexed bitstream is an MPEG-4 Transport stream.

64. (New) The video encoding system according to claim 57, wherein each of the generation of the base bitstream, the generation of the FGS bitstream, and the generation of the FGST bitstream comprises an FGS encoding.

65. (New) The video encoding system according to claim 57, wherein the FGS and FGST bitstreams are combined to generate a single enhancement bitstream.

66. (New) The video encoding system according to claim 57, wherein each of the base, FGS, and FGST VOPs comprises a plurality of bit planes.

67. (New) The video encoding system according to claim 57, wherein the base encoder performs discrete cosine transform (DCT) on the video stream to generate DCT coefficients, and wherein the DCT coefficients are provided in the processed video data to the enhancement encoder.

68. (New) A video decoding system for generating a base layer video and an enhancement video using a multiplexed bitstream, the video decoding system comprising:

a demultiplexer for demultiplexing and depacketizing the multiplexed bitstream to generate a base bitstream, a fine

granularity scalability (FGS) bitstream, and an FGS temporal scalability (FGST) bitstream;

a base decoder for decoding the base bitstream to generate one or more base video object planes (VOPs), each base VOP being associated with a base presentation time stamp (PTS) and a base decoding time stamp (DTS); and

an enhancement decoder for decoding the FGS bitstream to generate one or more FGS VOPs, each FGS VOP being associated with a corresponding base VOP, an FGS DTS, and an FGS PTS, and for decoding the FGST bitstream to generate one or more FGST VOPs, each FGST VOP being associated with two corresponding base VOPs, an FGST DTS, and an FGST PTS;

wherein each FGS VOP is decoded and presented at a same time unit,

wherein each FGST VOP is decoded and presented at a common time unit,

wherein each FGS VOP and its corresponding base VOP are presented at the same time unit,

wherein the base decoder comprises one or more frame buffers for storing partially decoded data of the base bitstream and the enhancement decoder comprises one or more frame buffers for storing partially decoded data of the FGS bitstream and the FGS bitstream, and

wherein at most a total of three frame buffers are used concurrently for decoding the base bitstream, the FGS bitstream and the FGST bitstream and for presenting the decoded bitstreams.

69. (New) The video decoding system according to claim 68, wherein each FGST VOP is decoded right after each FGST's two corresponding base VOPs have been decoded, unless this would cause an FGST VOP to be decoded out of display order, in which case, that FGST VOP is decoded in the display order.

70. (New) The video decoding system according to claim 69 wherein each of the decoding at the base decoder and the decoding at the enhancement decoder comprises an MPEG-4 decoding.

71. (New) The video decoding system according to claim 69, wherein each of the decoding at the base decoder and the decoding at the enhancement decoder comprises an FGS decoding.

72. (New) The video decoding system according to claim 69, wherein the multiplexed bitstream is an MPEG-4 Transport stream.

73. (New) The video decoding system according to claim 69, wherein each FGST VOP can be decoded as soon as each FGST VOP's two corresponding base VOPs are stored in the frame buffers of the base decoder.

74. (New) The method of decoding the multiplexed bitstream according to claim 69, wherein each FGST VOP is decoded with at most two frame buffers of the base decoder and at most one frame buffer of the enhancement decoder.